

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application.

1. (Currently Amended) An intervertebral implant for implantation between adjacent vertebrae, the implant having a central axis, the implant comprising:
 - a bottom closing plate having an external surface extending generally transversely to the central axis for contacting at least a portion of one of the adjacent vertebrae;
 - a bottom cover plate in contact with the bottom closing plate, wherein at least one of the bottom closing plate and the bottom cover plate is substantially rigid;
 - a top closing plate having an external surface extending generally transversely to the central axis for contacting at least a portion of the other adjacent vertebrae;
 - a top cover plate in contact with the top closing plate, wherein at least one of the top closing plate and the top cover plate is substantially rigid;
 - a central part provided between the top and bottom closing plates, the central part including a fiber system and a core, the fiber system being at least partially joined to the cover plates, and at least partially surrounding the core, and
 - a sheathing comprising an elastic sheathing body, the sheathing body at least partially surrounding the central part and being connected to the top and bottom cover plates;

wherein the core is an elastically formed body having a cavity, the cavity being filled at least partially with an incompressible liquid, the liquid being at least partially surround by the elastic formed body, the fiber system being wound on the elastic formed body.

2. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is embedded in the elastic sheathing body.

3. (Canceled)

4. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system has a radial thickness δ relative to the central axis and the sheathing body has a radial thickness d , wherein δ divided by d times 100% is in a range between 80% and 350%.

5. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system can move relative to the sheathing body.

6. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is mounted so that said fiber system cannot move relative to the sheathing body.

7. (Previously Presented) The intervertebral implant according to claim 1, wherein the entire fiber system is joined with the top and bottom cover plates.

8. (Previously Presented) The intervertebral implant according to claim 1, wherein the sheathing body is made from an elastomer selected from the group consisting of polyurethane, silicone rubber, polyethylene, polycarbonate urethane and polyethylene terephthalate.

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is mechanically anchored on or in the cover plates.

14. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is adhered to the cover plates.

15. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is joined with the cover plates in a form-locking manner.

16. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is formed by an endless fiber.

17. (Previously Presented) The intervertebral implant according to claim 1, wherein the top and bottom cover plates include a plurality of grooves for anchoring the fiber system.

18. (Previously Presented) The intervertebral implant according to claim 1, further comprising a plurality of channels mortised in an external surfaces of the cover plates to accommodate the fiber system.

19. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is formed by a woven material.

20. (Previously Presented) The intervertebral implant according to claim 1, wherein the core is selected from the group consisting of a hollow-cylindrical, a hollow-prismatic an ellipsoid, a partial sphere or a barrel-shaped with an axis of rotation that is coaxial with the central axis.

21. (Previously Presented) The intervertebral implant according to claim 19, wherein the woven material is formed from first and second fibers and the first fibers include an angle α with the central axis and the second fibers include an angle β with the central axis.

22. (Previously Presented) The intervertebral implant according to claim 21, wherein the first and second fibers are interwoven with one another.

23. (Canceled)

24. (Previously Presented) The intervertebral implant according to claim 21 wherein the angle α is between 15 degrees and 60 degrees.

25. (Previously Presented) The intervertebral implant according to claim 21 wherein the angle β is between 15 degrees and 60 degrees.

26. (Currently Amended) An ~~The~~ intervertebral implant for implantation between adjacent vertebrae, the implant having a central axis, the implant comprising: according to claim 11, a bottom closing plate having an external surface extending generally transversely to the central axis for contacting at least a portion of one of the adjacent vertebrae; a bottom cover plate in contact with the bottom closing plate, wherein at least one of the bottom closing plate and the bottom cover plate is substantially rigid;

a top closing plate having an external surface extending generally transversely to the central axis for contacting at least a portion of the other adjacent vertebrae;

a top cover plate in contact with the top closing plate, wherein at least one of the top closing plate and the top cover plate is substantially rigid;

a central part provided between the top and bottom closing plates, the central part including a fiber system and a core, the fiber system being at least partially joined to the cover plates, and at least partially surrounding the core, and

a sheathing comprising an elastic sheathing body, the sheathing body at least partially surrounding the central part and being connected to the top and bottom cover plates;

wherein the core is an elastically formed body having a cavity, the cavity being filled at least partially with an incompressible liquid, the liquid being at least partially surrounded by the elastic formed body; and

wherein the elastic formed body is surrounded by a semi-permeable membrane.

27. (Previously Presented) The intervertebral implant according to claim 1, wherein with regard to the central axis the fiber system is single-layered.

28. (Previously Presented) The intervertebral implant according to claim 1, wherein with regard to the central axis the fiber system is multi-layered.

29. (Canceled)

30. (Currently Amended) The intervertebral implant according to claim [1]29, wherein the fiber system is wound on the elastic formed body in two different directions.

31. (Previously Presented) The intervertebral implant according to claim 1, wherein the fiber system is made from UHMWPE (ultra high molecular weight polyethylene).

32. (Previously Presented) The intervertebral implant according to claim 1, wherein at least one of the closing plates includes at least one external surface feature on the external surface for anchoring the implant to one of the adjacent vertebrae.

33. (Previously Presented) The intervertebral implant according to claim 1, wherein the fibers have a diameter, the diameter being in the range of 0.005 mm and 0.025 mm.

34.-39. (Canceled)

40. (Previously Presented) The intervertebral implant of claim 1, wherein the top and bottom closing plates are made from titanium or a titanium alloy.

41. (Previously Presented) The intervertebral implant of claim 1, wherein the bottom cover plate and the top cover plate are joined to the bottom closing plate and the top closing plate, respectively.

42. (Previously Presented) The intervertebral implant of claim 1, wherein the bottom and top closing plates are substantially rigid.

43.-46. (Canceled)

47. (Previously Presented) An intervertebral implant for implantation between an upper and lower vertebrae, the implant having a central axis, the implant comprising:

a first substantially rigid bone contacting plate having an external surface extending generally transversely to the central axis for contacting at least a portion of the upper vertebra;

a second substantially rigid bone contacting plate having an external surface extending generally transversely to the central axis for contacting at least a portion of the lower vertebra;

a third plate operatively coupled to the first bone contacting plate, the third plate including a plurality of openings;

a fourth plate operatively coupled to the second bone contacting plate, the fourth plate including a plurality of openings;

a central part substantially located between the third and fourth plates, the central part including a flexible core and a fiber system, wherein the core is substantially cylindrical and includes a top surface and a bottom surface, the top surface of the core being in contact with the third plate and the bottom surface of the core being in contact with the fourth plate, and wherein the fiber system at least partially surrounds the core, and is at least partially received within the plurality of openings formed in the third and fourth plates so that the fiber system is joined to the third and fourth plates; and

an elastic sheathing body at least partially surrounding the fiber system and the core, and connected to the third and fourth plates.

48. (Previously Presented) The intervertebral implant of claim 47, wherein the first and second bone contacting plates are made from titanium or a titanium alloy.

49. (Previously Presented) The intervertebral implant of claim 48, wherein the fiber system is constructed of an ultra high molecular weight polyethylene (UHMWPE) material.

50. (Previously Presented) The intervertebral implant of claim 47, wherein the elastic sheathing body contacts at least a portion of a top surface of the third plate and at least a portion of a bottom surface of the fourth plate.